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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/926,408	02/04/2002	Robbie Thielemans	THIE3004/JEK	2069

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EXAMINER	
ANYASO, UCHENDU O	

ART UNIT	PAPER NUMBER
2675	

DATE MAILED: 11/04/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

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Office Action Summary	Application No.	Applicant(s)	
	09/926,408	THIELEMANS ET AL.	
	Examiner	Art Unit	
	Uchendu O Anyaso	2675	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *08 October 2004*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *29-50 and 53-62* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *29-50 and 53-62* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

1. **Claims 29-50** and **53-62** are pending in this action.

Claim Rejections - 35 USC ' 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

3. **Claims 29-44, 49, 50, 53-58, 60** and **61** are rejected under 35 U.S.C. 103(a) as being unpatentable over Nishida (U.S. 6,097,351) in view of Someya et al (U.S. 5,396,257).

Regarding **independent claims 29** and **53**, and for **claims 49, 50** and **54,** Nishida teaches a display device including an array of display elements to display information in that the display device is made up of a plurality of display units 50 (see Abstract; *see also* column 6, lines 17-21, figure 2 at 50).

Furthermore, Nishida teaches a general processing unit in the form of a control device 70, a display in the form of device casing 100 that consists of several device display units 50, and individual processing units in the form of controller 53 per display units 50 (*see* figure 2, 3 at 50, 53, 70, 100, column 6, lines 17-33; column 7, lines 1-8).

Furthermore, Nishida teaches how the control device 70 is provided for generating display signals to be supplied to the respective display units 50 through a signal transmission passage 71 (column 6, lines 30-33, figure 2 at 50, 70, 71).

Also, Nishida teaches how the control device 70, electric power passage 61 and signal transmission passage 71 facilitates the control communication between the control device 70 and each of the display units 50 in the form of signal transmission passage 71 wherein data from this signal transmission passage are collected at every display unit 50 (column 6, lines 29-45, figure 2 at 50, 70, 71).

However, Nishida does not teach how the control communication sent from the general processing unit to each of the individual processing units are individually distinct from the data stream sent to each processing unit. On the other hand, Someya et al teaches such a feature by teaching an invention that relates to a multiscreen display apparatus for forming one screen by combining a plurality of image display units (column 1, lines 5-7) wherein the control communication sent from computer control unit 7 to each of the data converters (4a-4d) are individually distinct from the data stream sent to each of the cores (6a-6d) via their respective D/A converters (figure 3 at 4a-4d, 5a-5d, 6a-6d, 7, 9).

Thus, it would have been obvious to a person of ordinary skill in the art to combine Nishida and Someya because while Nishida teaches how the control device 70 is provided for generating display signals to be supplied to the respective display units 50 through a signal transmission passage 71 (column 6, lines 30-33, figure 2 at 50, 70, 71), Someya teaches how such a device would be used to adjust luminance. The motivation for combining these inventions would have been to provide a multiscreen display apparatus capable of reducing luminance shading and color shading between a plurality of display units (column 2, lines 39-42).

Regarding **claim 30**, in further discussion of claim 1, Nishida teaches how the display units 50 are serially coupled (figure 2 at 50).

Regarding **claim 31**, in further discussion of claim 1, Nishida teaches how the display units would be made up of light emitting diodes (column 8, lines 41-67, figure 5 at 83R, 83G, 83B).

Regarding **claim 32**, in further discussion of claim 1, Nishida teaches how the control device 70, electric power passage 61 and signal transmission passage 71 facilitates the control communication between the control device 70 and each of the display units 50 in the form of signal transmission passage 71 wherein data from this signal transmission passage are collected at every display unit 50 (column 6, lines 29-45, figure 2 at 50, 70, 71).

Regarding **claim 33**, in further discussion of claim 4, Nishida teaches an embodiment wherein individual display units 80 include a main body 81 that contains three light emitting diodes 83R, 83G, 83B such that when activated, they present red, green and blue colors to the pixels (column 8, lines 41-67, figure 5 at 83R, 83G, 83B).

Regarding **claim 37**, in further discussion of claim 4, Nishida teaches how distributed signal processing is at least provided for the signals by teaching how the control device 70, electric power passage 61 and signal transmission passage 71 facilitates the control communication between the control device 70 and each of the display units 50 in the form of

signal transmission passage 71 wherein data from this signal transmission passage are collected at every display unit 50 (column 6, lines 29-45, figure 2 at 50, 70, 71).

Regarding **claim 38**, in further discussion of claim 9, Nishida teaches how signal processing occurs at both the control device 70 and the display units 50 by teaching how the control device 70, electric power passage 61 and signal transmission passage 71 facilitates the control communication between the control device 70 and each of the display units 50 in the form of signal transmission passage 71 wherein data from this signal transmission passage are collected at every display unit 50 (column 6, lines 29-45, figure 2 at 50, 70, 71).

Regarding **claims 55** and **56**, in further discussion of claim 25, Nishida teaches how the respective display units 80 can be removed for operational tests thereby making maintenance work very simple (column 10, lines 43-49, figure 10 at 80).

Regarding **claims 34-36**, in further discussion of claim 5, Nishida does not teach how to adjust the brightness or contrast of the display device. On the other hand, Someya teaches a multiscreen display apparatus in which one large screen is formed by combining screens of a plurality of display units (*see* Abstract) wherein luminance is adjusted by the control device (*see* Abstract; column 13, lines 9-26, figure 13 at 81).

Thus, it would have been obvious to a person of ordinary skill in the art to combine Nishida and Someya because while Nishida teaches how the control device 70 is provided for generating display signals to be supplied to the respective display units 50 through a signal

transmission passage 71 (column 6, lines 30-33, figure 2 at 50, 70, 71), Someya teaches how such a device would be used to adjust luminance. The motivation for combining these inventions would have been to provide a multiscreen display apparatus capable of reducing luminance shading and color shading between a plurality of display units (column 2, lines 39-42).

Regarding **claim 39**, in further discussion of claim 9, Nishida does not teach how the display units adjustments operates in a frequency independent fashion. On the other hand, Someya teaches this concept by teaching that a great feature of the present embodiment is that the comparison circuit 102 and the contrast control circuit 88 and the luminance control circuit 89 controlled by the comparison circuit 102 are completely separated from the minimum value circuit 90, the ABL circuit 114 and the contrast and/or luminance control circuit 111 and hence they operate independently (column 22, lines 66 through column 23, line 4).

Thus, it would have been obvious to a person of ordinary skill in the art to combine Nishida and Someya because while Nishida teaches how the control device 70 is provided for generating display signals to be supplied to the respective display units 50 through a signal transmission passage 71 (column 6, lines 30-33, figure 2 at 50, 70, 71), Someya teaches how the adjustments would occur in an independent fashion. The motivation for combining these inventions would have to provide a multiscreen display apparatus capable of reducing luminance shading and color shading between a plurality of display units (column 2, lines 39-42).

Regarding **claim 40**, in further discussion of claim 9, Someya teaches how a switching pulse (SP) is a control pulse synchronized preferably with a falling edge of a horizontal synchronizing pulse and having a pulse width T wherein the switching pulse (SP) controls the input signal of the contrast and/or luminance control circuit 111 (column 17, lines 3-17).

Thus, it would have been obvious to a person of ordinary skill in the art to combine Nishida and Someya because while Nishida teaches how the control device 70 is provided for generating display signals to be supplied to the respective display units 50 through a signal transmission passage 71 (column 6, lines 30-33, figure 2 at 50, 70, 71), teaches how a switching pulse (SP) is a control pulse synchronized preferably with a falling edge of a horizontal synchronizing pulse and having a pulse width T wherein the switching pulse (SP) controls the input signal of the contrast and/or luminance control circuit 111 (column 17, lines 3-17). The motivation for combining these inventions would have been to provide a multi-screen display apparatus capable of reducing luminance shading and color shading between a plurality of display units (column 2, lines 39-42).

Regarding **claims 41-44**, in further discussion of claim 9, Nishida teaches how signal processing occurs at both the control device 70 and the display units 50 by teaching how the control device 70, electric power passage 61 and signal transmission passage 71 facilitates the control communication between the control device 70 and each of the display units 50 in the form of signal transmission passage 71 wherein data from this signal transmission passage are collected at every display unit 50 (column 6, lines 29-45, figure 2 at 50, 70, 71). However,

Nishida does not teach how to achieve high resolution. On the other hand, Someya teaches how the display device is wired in order to achieve a high-resolution display (column 6, lines 34-49).

Thus, it would have been obvious to a person of ordinary skill in the art to combine Nishida and Someya because while Nishida teaches how the control device 70 is provided for generating display signals to be supplied to the respective display units 50 through a signal transmission passage 71 (column 6, lines 30-33, figure 2 at 50, 70, 71), Someya teaches how how the display device is wired in order to achieve a high-resolution display (column 6, lines 34-49). The motivation for combining these inventions would have to provide a multiscreen display apparatus capable of reducing luminance shading and color shading between a plurality of display units (column 2, lines 39-42).

Regarding **claims 57, 58, 60** and **61**, in further discussion of claims 29 and 53, Someya teaches how the control communication sent from the general processing unit to each of the individual processing units are individually distinct from the data stream sent to each processing unit by teaching an invention that relates to a multiscreen display apparatus for forming one screen by combining a plurality of image display units (column 1, lines 5-7) wherein the control communication sent from computer control unit 7 to each of the data converters (4a-4d) are individually distinct from the data stream sent to each of the cores (6a-6d) via their respective D/A converters (figure 3 at 4a-4d, 5a-5d, 6a-6d, 7, 9).

4. **Claims 45-48, 59** and **62** are rejected under 35 U.S.C. 103(a) as being unpatentable over *Nishida* (U.S. 6,097,351) in view of Someya et al (U.S. 5,396,257), and further in view of Wong (U.S. 6,005,557).

Regarding **claim 45**, in further discussion of claim 29, Nishida and Someya do not teach how the display device provides image stabilization. On the other hand, Wong teaches a method and apparatus for stabilizing an image formed on a display panel (column 1, lines 5-11).

Thus, it would have been obvious to a person of ordinary skill in the art to combine Nishida, Someya and Wong because while the combination of Nishida and Someya teach a display device with an array of display elements to display information in that the display device is made up of a plurality of display units 50 (see Abstract; *see also* column 6, lines 17-21, figure 2 at 50), Wong teaches a method and apparatus for stabilizing an image formed on a display panel (column 1, lines 5-11). The motivation for combining these inventions would have been to provide a user with a convenient adjustment technique that results in optimum stabilization (column 2, lines 10-15).

Regarding **claim 46**, in further discussion of claim 45, Wong teaches a time-dependent image stabilization by teaching a timer device 44 that controls the dot_clk signal 42 via the HSYNC signal (column 4, lines 4-15).

Also, Wong teaches a frequency dependent image stabilization by teaching apparatus 10 that includes a control apparatus 30 to enable the user to manually adjust the phase and frequency of the dot_clk signal 42 wherein the frequency of the dot_clk signal 42 may be

adjusted to correspond to the frequency of the image information signal 12 (column 4, lines 8-15; column 3, lines 23-32, figure 1 at 10, 42).

Regarding **claims 47** and **59,** in further discussion of claim 29, Nishida and Someya do not teach how the display device provides a master clock correction in order to achieve image stabilization. On the other hand, Wong teaches how the dot_clk signal would be adjusted/corrected in order to appropriate image stabilization (column 6, lines 26-34, figures 6-9 at 39, 42).

Thus, it would have been obvious to a person of ordinary skill in the art to combine Nishida, Someya and Wong because while the combination of Nishida and Someya teach a display device with an array of display elements to display information in that the display device is made up of a plurality of display units 50 (see Abstract; *see also* column 6, lines 17-21, figure 2 at 50), Wong teaches how the dot_clk signal would be adjusted/corrected in order to appropriate image stabilization (column 6, lines 26-34, figures 6-9 at 39, 42). The motivation for combining these inventions would have been to provide a user with a convenient adjustment technique that results in optimum stabilization (column 2, lines 10-15).

Regarding **claims 48, 62,** in further discussion of claims 47 and 53, Nishida teaches an embodiment wherein individual display units 80 include a main body 81 that contains three light emitting diodes 83R, 83G, 83B such that when activated, they present red, green and blue colors to the pixels (column 8, lines 41-67, figure 5 at 83R, 83G, 83B).

Response to Arguments

5. Applicant's arguments filed October 8, 2004 have been fully considered but they are moot in view of a new grounds of rejection.

Contact Information

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Uchendu O. Anyaso whose telephone number is (703) 306-5934. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Steve Saras, can be reached at (703) 305-9720.

Any response to this action should be mailed to:

Commissioner of Patents and Trademarks

Washington, D.C. 20231

or faxed to:

(703) 872-9314 (for Technology Center 2600 only)

Hand-delivered responses should be brought to Crystal Park II, 2121 Crystal Drive, Arlington, VA, Sixth Floor (Receptionist).

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Technology Center 2600 Customer Service Office whose telephone number is (703) 306-0377.

Uchendu O. Anyaso

11/1/2004

CHAU NGUYEN
PRIMARY EXAMINER